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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,673	03/29/2001	Eiichi Murakami	684.3161	3158

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EXAMINER

COLEMAN, WILLIAM D

ART UNIT PAPER NUMBER

2823

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 09/819,673	Applicant(s) MURAKAMI, EIICHI	
	Examiner W. David Coleman	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-33 and 38-40 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 26-33 and 38-40 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on February 3, 2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 26, 27, 28, 29, 31, 32 and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoriyuki Ishibashi, Japanese Patent Abstracts 07-029812.

4. Ishibashi teaches an exposure apparatus for exposing a substrate with a pattern of an original, said apparatus comprising:

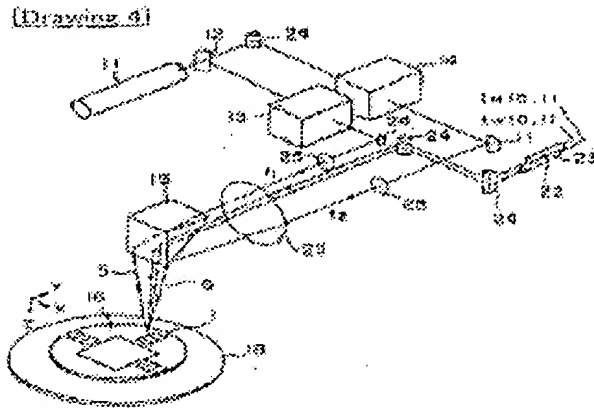
a housing **32**, for accommodating therein at least a portion of a light path of exposure light **12**;

a reflecting member **24** disposed in said housing; and

a laser interferometer **11** having a light source and a light receiving element **22/23** for receiving light from the light source after being reflected by said reflecting member,

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wherein at least one of the light source and the light receiving element is disposed outside said housing.



5. Pertaining to claim 27, Ishibashi teaches an apparatus according to claim 26 further comprising a projection lens 25 for projecting the pattern of the original onto the substrate, wherein said housing is effective to close one of (i) a space below the projection lens and accommodating the substrate therein and (ii) a space above the projection lens and accommodating the original therein.
6. Pertaining to claim 28, Ishibashi teaches an apparatus according to claim 26, further comprising a pressure reducing mechanism for applying a vacuum to said housing [0014].
7. Pertaining to claim 29, Ishibashi teaches an apparatus according to claim 26, further comprising a window 31 provided at an interface between the inside and outside of said housing, for transmitting light from said laser interferometer there through.

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8. Pertaining to claim 31, Ishibashi teaches an apparatus according to claim 26, further comprising a gas introducing mechanism for introducing an inactive gas into said housing.
9. Pertaining to claim 32, Ishibashi teaches an apparatus according to claim 26, wherein of nitrogen and helium is introduced into said housing [0014].
10. Pertaining to claim 38, Ishibashi teaches a device manufacturing method, comprising the steps of :
- exposing a substrate **18** with a pattern **16** of an original by use of an exposure apparatus;
 - and
 - developing the substrate after the exposure, wherein the exposure apparatus includes
 - (i) housing **32**, for accommodating therein at least a portion of a light path of exposure light,
 - (ii) a reflecting member **24** disposed in the housing, and
 - (iii) a laser interferometer having a light source and a light receiving element for receiving light from the light source and the light receiving element is disposed outside the housing.
11. Pertaining to claim 39, Ishibashi teaches an exposure apparatus for exposing a substrate with a pattern of an original, said apparatus comprising:
- a housing 32 having a first space inside thereof, the first space being different from an atmospheric state; and

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a detection system including

(i) a light source 11,

(ii) a light receiving element 22/23 for receiving light from the light source, and

(iii) an optical system for directing light from the light source to the light receiving element,

wherein a portion of a light path of said optical system is disposed in the first space inside said housing, at least one of the light source and the light receiving element is disposed in a second space outside said housing, and the second space has an ambience being different from the atmospheric state.

12. Pertaining to claim 40, Ishibashi teaches an exposure apparatus for exposing a substrate with a pattern of an original, said apparatus comprising:

a housing, filled with a predetermined ambience, for accommodating therein at least a portion of a light path of exposure light; and

a detection system for executing focus adjustment of the substrate, wherein a portion of a light path of said detection system is disposed in said housing while at least a portion of the light path of said detection system including an electrical element thereof is disposed outside said housing.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi Japanese Patent Abstracts 07-029812 in view of Applicants Admitted Prior Art (AAPA).

15. Ishibashi discloses an exposure apparatus substantially as claimed.

16. Pertaining to claim 30, Ishibashi fails to disclose an apparatus according to claim 26, wherein an oxygen concentration in said housing is maintained at not greater than 10 ppm. AAPA teaches having an oxygen concentration not greater than 10 ppm. In view of AAPA it would have been obvious to one of ordinary skill to incorporate the concentration limits of the AAPA into the Ishibashi exposure apparatus because the absorption of oxygen by light is very large (see background in specification).

17. Pertaining to claim 33, Ishibashi fails to teach an apparatus according to claim 26, wherein light to be used for the exposure is laser light having a wavelength not greater than 248 nm. AAPA teaches a laser light having a wavelength not greater than 248 nm. In view of AAPA, it would have been obvious to one of ordinary skill in the art to incorporate the laser light of AAPA in the Ishibashi exposure apparatus because the resolution of the exposure projection system is improved.

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Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 571-272-1856.

The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



W. David Coleman
Primary Examiner
Art Unit 2823

WDC